

# THE Lake Steward

Your source for lake news in King County

Vol. 11, No. 1 Winter 2004

## Lakeside Living

### Understanding Trees Up & Down

During our often-windy northwest winters, trees don't always stay put, which can be a serious problem. Susceptible or diseased trees that could fall on property or people, often known as "hazard trees," can be dealt with in advance (see "Hazard Tree" sidebar on p. 5). Yet, as we know, healthy trees can also be blown down in their prime at the whim of the wind. This poses a particular challenge for lakeside dwellers, since their properties include the fragile, highly regulated edges of some of the most important natural resources in our county.

Lakes and their upland edges are considered "sensitive areas." For a variety of environmental reasons, including water quality, water storage, and wildlife habitat, it is especially important to make sure trees are not moved unnecessarily in these areas.

#### **If a tree falls in the woods...do you need a permit to move it?**

Prior to removing a tree, check to make sure no permits are required from the King County Department of Development and Environmental Services (DDES) and/or possibly other local, state or federal agencies.

If a tree falls down and does not obstruct anything, the best thing to do is leave it to become a wildlife tree. However, if a diseased or downed tree poses a safety or structural damage risk, the King County Code states that you may remove it without a permit as long as any actions you



*An osprey perched on the branch of a fallen tree, left as wildlife habitat.*

take are reported to DDES immediately. Also note, that once a tree falls into a lake it is considered habitat; removing habitat requires a Hydraulic Project Application Permit from the Washington State Department of Fish and Wildlife.

It is important to know that DDES addresses each situation individually. There is no blanket rule for dealing with trees at risk of falling and it is important to contact DDES prior to any tree removal within a sensitive area.

Additional information about DDES permitting or sensitive area regulations is available on the Internet at [www.metrokc.gov/ddes/](http://www.metrokc.gov/ddes/) or by calling 206-296-6600.

#### **Trees can be down but not out...snag 'em**

Is the damaged or downed tree out of the way? Not threatening structures or safety? Snapped off eight or more feet above the ground but otherwise sound? Partially submerged in

a lake or stream? If it is, consider leaving the tree for the numerous native wildlife species that make good use of dead and dying trees.

Pileated woodpeckers, wood ducks, hooded mergansers and even little chickadees nest in cavities of dead trees, also known as "snags." Kingfishers, eagles and osprey search for fish from branches overhanging the water, while juvenile salmon and trout hide in tangled underwater branches. Bats roost under loose bark on decaying snags, then leave at night to eat mosquitoes and other pesky insects.

Once decay starts, wood boring insects move in and attract many other species who feed on them, from woodpeckers to raccoons. Consider the recent experience of a local lakeside resident:

"We learned an interesting ecology lesson recently. Some of the alders right at the lake edge...fell over into the lake, leaving their crowns half out of the water. At first, we wanted

*Continued on p. 5*



*Fallen trees can be left for habitat, provided there are no safety risks.*

## Lake Monitors Report

# King County Lakes Stay Constant in 2003 Water Year

Dedicated volunteers at more than 50 lakes in western King County have completed another year of monitoring. September 30, 2003 marked the end of the 2003 water year, although water quality sampling continued through October, making it one of the most successful years yet. Water samples indicate that water quality in monitored lakes remains relatively constant, when compared to the last five years. Despite the unusual weather at the beginning of the water year, by the time volunteer monitors began collecting water samples (April-October, every other week) most lakes were exhibiting relatively normal conditions.

The 2003 water year got off to an unusually dry and warm start. Many residents may recall unusual conditions at several lakes in western King County brought on by this unseasonable weather. Most outstanding among the abnormal conditions were extremely low lake levels, which were almost certainly due to far below normal precipitation. From 1949 to 2003, the average rainfall at SeaTac Airport for the month of October was

3.51 inches. In October 2002, only 0.71 inches of rain fell at SeaTac. By contrast, October 2003 had 8.98 inches!

### 2003 Water Sampling Program at a Glance

<i>Lakes monitored:</i>	51
<i>Sampling events:</i>	14
<i>Total possible samples:</i>	714
<i>Samples analyzed</i>	675
<i>Percent analyzed:</i>	94.5%

*Thanks to our amazing volunteers!*

The dry weather at the beginning of the water year, followed by a warm winter may have contributed to a greater number of algae blooms than normal in winter and spring. Lake Stewardship Program staff responded to many residents who were concerned about what appeared to be paint, oil slicks, or some kind of chemical. Fortunately, all turned out to be abnormally abundant blue-green algae "blooms."

It is possible to classify a lake's

biological productivity by calculating the Trophic State Index (TSI) using water sample data collected by volunteers. Although residents had some concerns about increased algal productivity, based on concentrated algae at lake shorelines, 2003 TSI values based on chlorophyll *a* were generally close to the average of values from the last four years. Lakes included in Chart 1 (opposite page) have data from 2003 and at least two of the previous four years. When comparing 2003 TSI values with the average values from the last four years, 29 of the 43 lakes showed a drop in chlorophyll *a* TSI values, and 14 showed an increase.

Chart 2 (opposite page) shows the average TSI for chlorophyll *a* of the same 43 lakes for the last five years. You can see that among the lakes monitored, the chlorophyll *a* TSI values have changed very little in the last five years. In 2003, Secchi transparencies and total phosphorus values, the other parameters commonly used to calculate TSI, were also close to the average values in the last four years.



## Lakeside Living News & Events

*For TTY Relay call 711 for information or assistance on any of the King County programs or events.*

### Save the Date: April 10, Volunteer Training

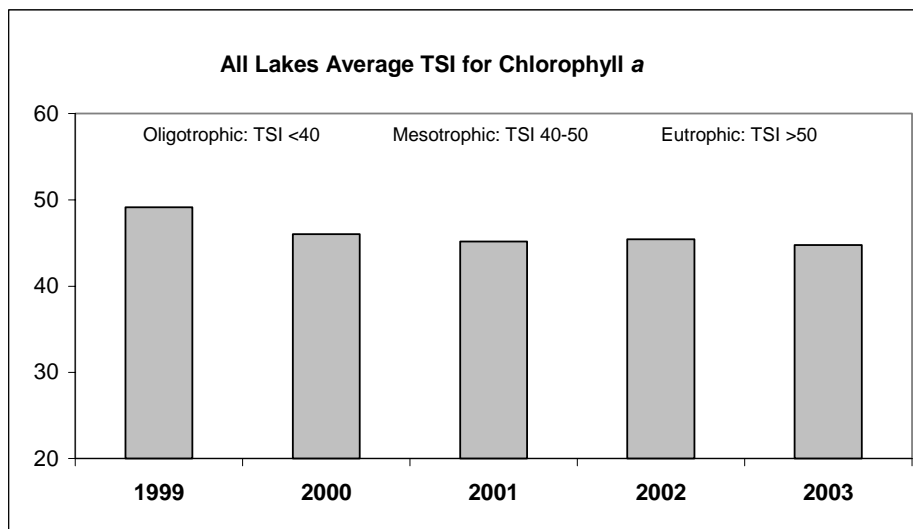
The annual training workshop for Volunteer Lake Monitors, new and returning, will be held Saturday, April 10, from 9:00 a.m. to Noon at the Kirkland Senior Center, 352 Kirkland Avenue. Look for details to arrive soon by mail or contact Katie Messick at [katie.messick@metrokc.gov](mailto:katie.messick@metrokc.gov) or 206-263-5086.

### Go Fish! Or Swim, or Picnic!

To see what recreational amenities are available at King County's wonderful small lakes, check out the new **Small Lakes Recreation At-A-Glance** brochure. Get information about boating, fishing, community centers, parks, picnic areas, playgrounds, trails and swimming beaches. Download the brochure at <http://dnr.metrokc.gov/lakes/> or call 206-296-6519 to request a copy.

## Lake Monitors Report (Cont.)

# TSI Comparisons for Chlorophyll *a*



## 2002 Lake Monitoring Report Now Online

The King County Lake Monitoring report for the 2001-2002 water year is now available online. It includes data collected by more than 100 volunteer lake monitors, on over 50 small county lakes.

<http://dnr.metrokc.gov/wlr/waterres/smlakes/>

Chart 1: Average Trophic State Index (TSI) for chlorophyll *a* in monitored lakes.

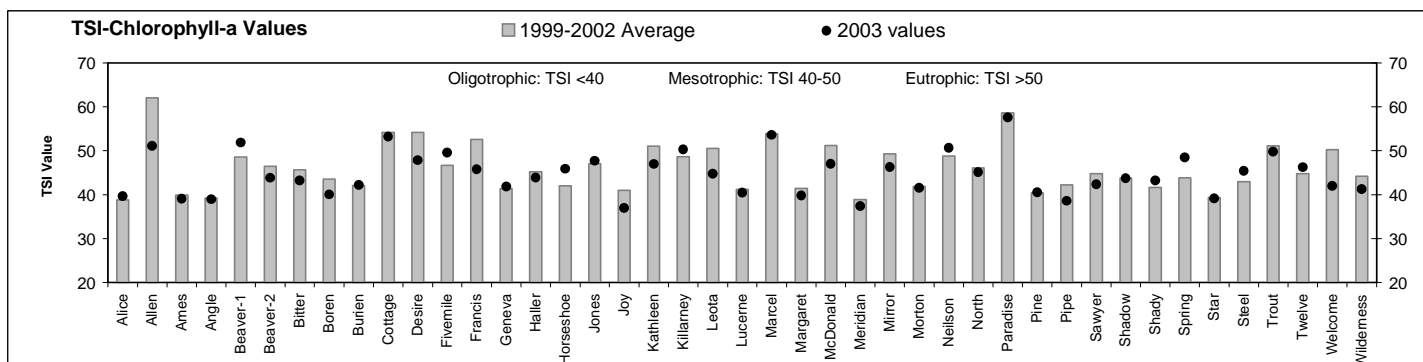


Chart 2: Average Trophic State Index (TSI) for chlorophyll *a* over five years.

## Going Native: A guide to creating your own native plant landscape

This new brochure covers choosing the right native plant for your landscape conditions, site maintenance, and plant lists.

Available in brochure format by calling 206-296-6519 or online at <http://dnr.metrokc.gov/wlr/pi/go-native/>.

## Free Litter Cleanup on Public Property

King County offers free litter and illegal dumping cleanup services on publicly owned property (city, county, state, and federal).

For more information call the King County Solid Waste Division at 206-296-4466 or go to <http://dnr.metrokc.gov/swd>.

## Lake Solutions for the 21st Century

Find them at the 17<sup>th</sup> Annual Conference of the Washington State Lake Protection Association (WALPA) being held March 31 to April 2, 2004 in Bellingham, WA. The latest information from lake experts will be presented. For more information go to [www.nalms.org/walpa/](http://www.nalms.org/walpa/) or call 206-441-9080 x116.

## Lake Ecology

# The Private Life of Rotifers



*Floscularia*

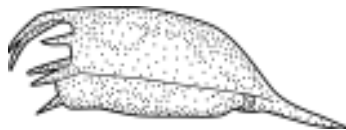
Most people might think of fish or possibly mosquito larvae if asked what kinds of animals live in their lakes. Some, more knowledgeable, might mention crustaceans, such as *Daphnia* or copepods. But very few are familiar with rotifers, and yet these special animals are common and even abundant, making up a major part of the plankton in lakes, as well as attaching to surfaces such as docks, rocks, and aquatic plants.

Rotifers are tiny — usually no more than five thousandths of an inch. Their small size kept them from being discovered by early Western scientists until microscopes became available for use in the early 1700s. However, they are much more complex than single-celled protozoans. They have well-developed organs for feeding and digestion, excreting, breathing, moving, sensing and reproducing. The group's name comes from an imagined resemblance that their feeding parts have two revolving wheels, although the rotating effect is actually produced by the synchronized waving of hair-like cilia. Rotifers are most often translucent, sometimes allowing

the color of the food they're digesting to show through.

Many rotifers stay suspended in water, filtering it for particles and eating anything they find that will fit into their mouths. This can include small algae, bacteria, protozoa, fungi, pollen, and pieces of detritus. A few rotifers are more particular predators, swimming after and engulfing their prey. Others have tiny toes that they use to creep about on surfaces, looking for food items.

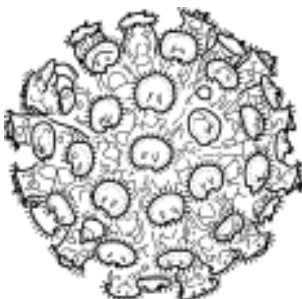
Although both sexes are produced, the majority of rotifers found in nature are females. The rarer males tend to be much smaller and short-lived. For some species, no males have even been found. Reproduction



Lateral view of *Keratella cochlearis*

occurs most often by a process called parthenogenesis, in which a female creates young that are identical to herself. This can happen rapidly, producing large populations in short periods of time.

Rotifers common to King County lakes include the solitary *Keratella* and a colonial form named *Conochilus*, as well as a predatory species called *Asplanchna*. Some forms that live their lives attached to a surface include *Collotheca* and *Floscularia*, which builds a tube of armor for itself. Rotifers are an excellent example of the many amazing creatures that live beside us every day, unseen but very important to the ecosystems that we share.



*Conochilus*, a colonial rotifer form.

## Ask Dr. Lakenstein

# Lake Levels

Dear Dr. Lakenstein,

We had a pretty good rain last night and now our dock is under water. How can we get the water to go back down?

Signed,  
All Wet at  
Lake Dolloff



Dear All,

In most cases, you just need patience. Water levels in lakes are the result of the balance between inputs and outputs. Input includes water coming in by streams, direct flow off the land around the shoreline and ground water movement, while water exits by outlet streams and evaporation, as well as some ground infiltration, depending on the individual basin.

When more water comes in than can exit quickly, the lake level goes up until the water can leave through the outflow. This often happens when a large storm comes through. However, sometimes levels can change because of debris blocking the outlet channel, for example, a log jam. In those cases, unblocking the channel should speed up the rate of outflow.

To keep your dock dry throughout the year, be sure you know where the usual high water mark is on your shoreline and build the walkway above that elevation. Because our lakes fluctuate naturally through the wet and dry seasons of the year, some people opt to build floating docks that move up and down with the water level.





## Hazard Tree Recognition

Trees, or parts of trees, which are structurally weakened may pose a threat to people and property. Check trees near your home for the following signs:

- **Dead or dying, poorly attached limbs.**
- **Leaning trees or cracks in soil** which indicate root movement.
- **Old wounds and obvious signs of decay** (fungal conks; hollow trunks).
- **Shortened height growth or sudden large crop of cones** (often indicates root disease).
- **Signs of root damage** (including compaction, pavement, or fill over the root zone).
- **Yellowing, reddening or thinning foliage.** Note: Some discoloration and loss of older foliage is normal. Most conifers have some foliage near the interior branches which turns yellow or reddish and drops from the tree each fall. This may be more pronounced in drought years and may be very noticeable in pines and cedars.

If the problem is confined to a single branch, corrective pruning may solve the problem. If all or most of the tree is affected, removal is likely necessary. Trees which exhibit symptoms of overall decline can rarely be saved.

For more information, call the Forest Health Program at 360-902-1300, email [forest\\_health@wadnr.gov](mailto:forest_health@wadnr.gov) or ask a certified arborist.

*Information provided by the Washington State Department of Natural Resources.*

## Lakeside Living (Cont.)

### Trees...

to get them removed, but they've become perches for the green herons to hunt from and feeding grounds for a lot of small passerines...

"A few days ago, an eagle was hovering madly over them while a lot of scared coots huddled underneath where they were safe. The eagle had to give up and retire to its favorite perch on one of the very tall Douglas firs. So fallen trees have specific roles in creating habitats and influencing feeding patterns. Lots of fun!"

Consider working with a tree service provider, experienced in creating wildlife trees. A chainsaw in the right hands can simulate all sorts of natural habitats. To locate a company near you, contact the Plant Amnesty referral service at 206-783-9813 or go to: [www.plantamnesty.org](http://www.plantamnesty.org).



### The Lake Steward

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### To Contact Us:

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206-296-6519

For online resources relating to lakes in King County, go to:

<http://dnr.metrokc.gov/lakes/>

## FYI File

## Volunteers Needed

The King County Lake Stewardship Program is looking for volunteers (April through October, year-round, or back up as needed) on the lakes listed below.

All equipment and training is provided. Contact: Katie Messick at [katie.messick@metrokc.gov](mailto:katie.messick@metrokc.gov) or 206-263-5086.

Alice  
Bitter  
Boren  
Dolloff  
Echo - Shoreline  
Echo - Snoqualmie  
Fenwick  
Fivemile  
Geneva  
Hicks (Garrett)  
Killarney  
Jones  
Langlois  
Lucerne  
Neilson (Holm)  
Pine  
Sawyer  
Star  
Webster

## What Volunteers are Saying

"This is a great program and it's good to see our tax dollars put to such excellent use. The staff is extremely knowledgeable, very accessible and quick to respond to questions and concerns."

*~Lake McDonald Volunteers*

"This 'job' is great, it gets me out and looking at what's going on."

*~Lake Morton Volunteer*





## King County

Department of Natural Resources and Parks  
**Water and Land Resources Division**  
King Street Center  
201 South Jackson Street, Suite 600  
Seattle, WA 98104

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## The Lake Steward Winter 2004

### ***Duplicate mailings? Change of name or address?***

Call 206-296-1959 or send this mailing label, with the correct address clearly marked, to the above address.

Please allow 6-8 weeks for changes.


This newsletter is also available online at

**<http://dnr.metrokc.gov/lakes/>**

Alternative formats  
available upon request.

Voice: 206-296-6519

or TTY Relay: 711

 Printed on recycled paper. Please recycle.



*Volunteer Lake Monitors and King County staff gathered for a tour of the Hazel Wolf Wetland Preserve on January 17, 2004. The King County Lake Stewardship Program organized the tour in appreciation of the hard work and dedication of our volunteers. To learn more about volunteering go to <http://dnr.metrokc.gov/lakes/>.*

## ***In This Issue***

Understanding Trees Up and Down.....1

Lake Monitors Report: 2003 Water Year Remained Constant.....2

Lakeside Living News & Events....2

The Private Life of Rotifers.....3

Dr. Lakenstein on Lake Levels.....3

Volunteers Needed.....4

*The Lake Stewardship Program monitors the water quality of small lakes in King County. We empower citizens to act as stewards of their lakes and watersheds through education, volunteer opportunities, and technical assistance.*